

**FARMERS TRAINING ON INFORMAL SEED PRODUCTION
OF WHEAT & LENTIL**

(CRP 1.1 DRYLAND SYSTEMS)



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SUMMARY

Wheat and lentil are important crops to ensure food and nutritional security in dryland region. However, yield of these crops is quite low. Farmers plant local varieties using their own unimproved seeds. Low crop yield affects livelihood of these low income group farming communities majority of who have limited livelihood beyond agriculture. Increasing population and shrinking land and other resources indicate that crop yields in barani areas will have to increase per unit area on a sustainable basis to ensure food and nutritional security.

Improved crop cultivars have been developed by NARS and were selected by farmers for their ecologies during the last season. However, their adoption would depend on availability of quality seed. There is no seed company operating in dryland areas, therefore, informal seed production was the preferred choice. Farmers' training in informal seed production was therefore, planned under CRP Dryland Systems to develop capacity of rural farming communities produce quality seed for themselves as well as for their nearby farmers. This activity was a continuity of the last season effort whereby the local farming communities had selected the most suited wheat and lentil cultivar for their areas through participatory varietal selection on-farm trials in Chakwal. The consultations with farmers lead to selection of four community members suitable for training as seed entrepreneur.

The one day training session was organized at BARI Chakwal on July 05, 2015. The event targeted capacity development of the selected farmers (04) on informal seed production of wheat and lentil. Farmers were demonstrated various practices whereby they could maintain purity of the seed once they are able to get certified seed of the cultivar of their choice. It was agreed that the session would be followed by supervised sowing of seed increase plots of one selected variety each of Wheat (3 acres, Dharabi-11) and lentil (1 acre, Markaz-09) at selected fields of trained farmers, field visits during crop growing season to provide on-site assistance to these farmers in informal seed production. The successful implementation of the activity will help rural farming communities to produce quality seed in their own areas not only for themselves but also for the nearby communities and is expected to help them increase crop yields, resilience and farmers income.

1. INTRODUCTION:

The barani areas of Punjab contribute substantially to cropped area in Punjab, Pakistan (Fig. 1).

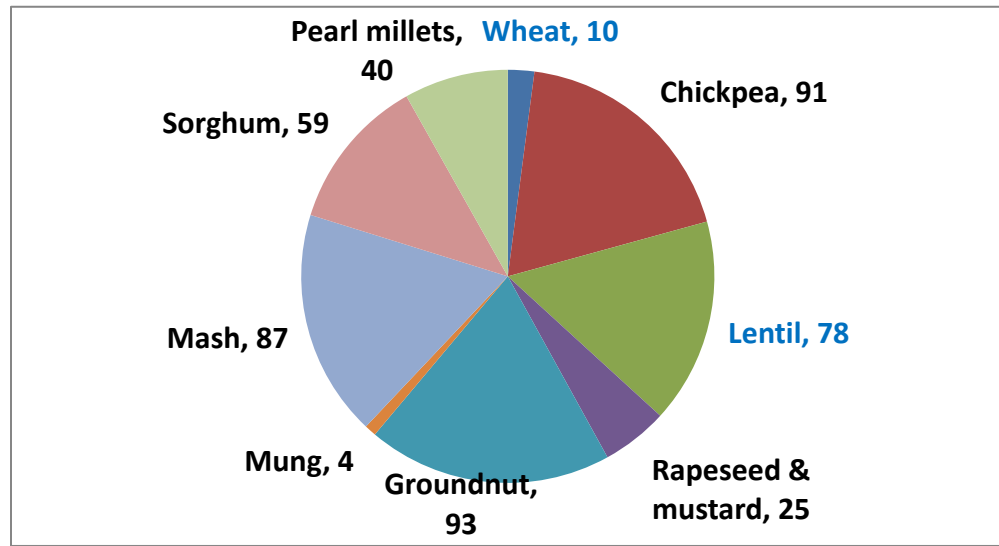


Fig.1 Percent contribution of dryland areas to cropped area in Punjab

Wheat, chickpea and lentil are important crops to ensure food and nutritional security in dryland region. However, yield of these are low. The last ten years statistics of dryland areas show average wheat grain yield ranged from 483 to 987 kg ha⁻¹; average chickpea yield varied between 213-764 kg ha⁻¹ while for lentil it was in the range of 475-592 kg ha⁻¹ in Punjab (Punjab Development Statistics, 2014).

Farmers plant local varieties using their own unimproved seeds. Low crop yield affects livelihood of these low income group farming communities majority of who have limited livelihood beyond agriculture. Increasing population and shrinking land and other resources indicate that crop yields in barani areas will have to increase per unit area on a sustainable basis to ensure food and nutritional security. Improved crop cultivars have been developed by NARS and were selected by farmers for their ecologies during the last year. However, their adoption would depend on availability of quality seed. The situation is even worse in the dryland belt areas as authentic seed companies including Punjab Seed Corporation (PSC) are not supplying certified seed of even main cash crops in the area (GoP, 2010). The frequent climatic variations in the areas discourage the seed companies to

manufacture and market quality seed to farmers in the rainfed areas. The farmers are consequently using poor quality old low yielding varieties seed produced locally. Due to non-availability of improved seed in rainfed tract substantial area remains devoid of agriculture crops that result in exposure of soil to erosion and leads to soil degradation and desertification. It was, therefore, essentially required to explore mechanism for availability of certified seed of improved varieties to farmers in the rainfed areas to prevent further expansion of land degradation and desertification process.

Healthy and pure seed source have been found to give better seed germination and good crop stand which enabled the plants to withstand abiotic stress especially drought during the crop season and was found to produce higher yield (Tariq *et al.*, 2012). Therefore, it was planned under CRP DS to develop the capacity of selected farmers in informal seed production. The trained farmers are expected to work as seed entrepreneur.

2. METHODOLOGY

The consultations with farmers lead to development of following criteria for farmers selection:

- A progressive farmer
- Relatively large land holding
- Storage capacity to store seed
- Good social linkage with nearby farmers

Based on the above criteria, a total of 04 farmers were selected after individual meetings with the farmers and extension agents of respective area-they usually have good linkages with such farmers.

The training on informal seed production mainly targeted developing the capacity of selected farmers in maintaining seed purity, quality seed production & processing. The training session was conducted at Barani Agricultural Research Institute, Chakwal.

List of farmers trained as seed entrepreneur:

Sr. No.	Name of the farmer	Village name	Mobile #
Tehsil Talagang			
1.	Ghulam Shabbir	Saghar	0331-5977933
2.	Haji Zafar	Akwai	0332-5344897
Tehsil Chakwal			
3.	Master Muhammad Javed	Sakryala	0347-5080930
4.	Dr. Fakhr-ul-Hassan	Latifaal	0313-5692628

Resource persons:

- Dr. Muhammad Ramzan Anser
- Mr. Ishfaq Ahmad



Fig 2 : A pictorial view of the training session

Trainees were provided with a copy of the draft brochure on seed production. The following check list was developed for the farmers to ensure quality seed production and processing:

- Seed of latest approved cultivar is obtained from an authentic source
- Drill is cleaned before sowing of seed crop
- Weeds are controlled before flowering or seed production stage
- Off-types plants are removed at heading
- Made sure labor does not use green stems of nearby fields to tie wheat bundles at the time of crop harvesting
- Thresher is cleaning before threshing of seed crop
- Seed bags are properly labeled during threshing

This part of the conceptual training was essential to mentally prepare the potential seed entrepreneurs to get ready for establishing seed increase plots in their ecologies.



Fig 3 : In-session briefing and discussion with the seed entrepreneurs



Fig 4 : Group photo of the trainee farmers with the resource persons

The seed entrepreneurs expressed their opinion that they would try their best to produce quality seed not only for themselves but also for nearby interested farmers. The mode could be the seed exchange with the village farmers or sale to them at a premium price slightly higher than the price of the produce. However, it was desired if the operations are supervised by BARI scientists during the first season to ensure all operations are performed in good manner.

The trained farmers would establish seed increase plots of at least 3 acres of wheat cultivar “Dharabi-11” and one acre of Lentil cultivar “Markaz-09” during the coming winter (Rabi) season 2015 with project support and technical supervision.

3. LITERATURE CITED

GOP. 2010. Agricultural Statistics of Pakistan, Ministry of Food and Agriculture and Cooperative, (Planning Unit), Government of Pakistan, Islamabad. Punjab.

Punjab Development Statistics. 2015. Bureau of Statistics, Government of Punjab, Lahore.
<http://bos2.pitb.gov.pk/system/files/Dev-2014.pdf>

Tariq, M., R. M. Omer, M. A. Mian, O. Rehman, A. T. Virk and K. Abbass. 2012. Promoting certified seed availability of wheat (*Triticum aestivum L.*) through public-private partnership and its impact on yield in rainfed areas